

tools are yet to be developed, these findings suggest the need for better precautionary measures to control unnecessary occupational exposures. Several guidelines have been developed concerning work with cytotoxic drugs. The principles of minimizing occupational exposure include good operational practice: the wearing of personal protective equipment (gloves, masks and clothing), the use of biologic safety cabinets (vertical laminar flow-containment hoods and bacteriologic glove boxes) and the proper labeling and disposal of cytotoxic waste products. Despite the use of precautionary measures, there is always a possibility of system failure and consequent exposure. Therefore, the need for biologic surveillance exists. Because of the large variability among persons, preemployment baseline measurement of sister chromatid exchange or urine mutagenicity may be more meaningful for exposure assessment to cytotoxic drugs than comparison of test results with normal population values.

The long latency period for the development of most cancerous lesions necessitates doing large-scale retrospective or prospective studies to determine cause-effect relationships between exposure and carcinogenesis. In the meantime, appropriate control measures should be exercised to protect hospital personnel who have significant daily occupational exposure to these medications. Other things being equal, the degree of exposure is a function of the amount of material being handled. Cytotoxic materials are handled in hospitals, free-standing clinics and physicians' offices.

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Video Display Terminals and the Eye

THE PUBLIC PRESS has suggested that many adverse medical effects occur from the use of video display terminals (VDTs). It has been reported that VDTs adversely affect the outcome of pregnancy and cause orthopedic and ocular problems, as well as possibly other problems. Only ocular problems will be dealt with in this article. The following paragraphs are modifications from a paper prepared by the American Academy of Ophthalmology.

A number of studies have been made by scientists at the Food and Drug Administration's Center for Radiological Health and Devices, Bell Laboratories and the National Institute of Occupational Safety and Health. The data from their work indicate that the VDTs "emit little or no harmful ionizing (eg, x-rays) or nonionizing (eg, UV [ultraviolet]) radiation under normal operating conditions." The emissions that were detectable were all well below the current national and international safety standards and were no greater than those produced by fluorescent lighting. In fact, the amount of ultraviolet radiation produced by VDTs is a small fraction of that produced by fluorescent lighting.

As for ocular damage, the best available current experimental and epidemiologic evidence does not indicate, or show, that the level of ultraviolet radiation emitted by VDTs is capable of exerting any deleterious effects on the ocular lenses of personnel using their terminals. Further, our own cornea and lens serve as natural filters for ultraviolet radiation, thereby protecting the retina, which is sensitive to low-level ultraviolet radiation.

Although there is no evidence that VDTs cause permanent ocular damage, in some work environments their use is associated with complaints of physical discomfort. These include ocular irritation (red, teary or dry eyes), fatigue (tired, aching heaviness of the eyelids), difficulty focusing (blurriness for seeing near or far objects), headaches, backaches and other musculoskeletal discomfort. Studies, particularly in Europe, indicate that most of these problems are related to poor ergonomic design of the workplace, lack of attention to the lighting and reflectance level of work surfaces, the type and intensity of the job demands and the quality of the video display. These can be alleviated by having the seating, angle of the VDT and so forth adjustable to each worker's comfort needs; by adjusting the lighting to minimize glare; by using high-quality monitors whose contrast and brightness can be controlled by the operator, and by making provisions for periodic rest breaks. In addition, eyeglasses worn by the workers, particularly those 40 years and older who have a reading or bifocal section, may need to be adjusted for the distance at which they view the VDT.

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Chronic Encephalopathy From Organic Solvents

ACUTE SYMPTOMS from organic solvent exposure resemble intoxication, ranging from simple depression or loquacious euphoria to slowed reflexes, dysarthria, dizziness, nausea, confusion, ataxia and even coma. Recurrent symptoms of intoxication associated with solvent exposure suggest the presence of chronic toxic encephalopathy analogous to that seen with long-standing ethanol abuse.

With repeated significant exposure, cumulative neuronal damage will produce gradual clinical manifestations of short-term memory loss, irritability, personality change, lethargy, impaired learning, impaired perception, depression and social withdrawal, all of which reflect a loss of cognitive abilities. There may be a history of eliminating or drastically reducing alcohol intake because of symptom exacerbation. Affected persons may frankly admit their diminished capacities or may confabulate or alibi to cover embarrassment. Although slowed peripheral nerve conduction can often be shown by measurement, clinical symptoms of peripheral neuropathy are less common. Dexterity and balance maintenance may be impaired.